

Claim Amendments

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Original) An aqueous dispersion, comprising:
a silicon powder having a silicon dioxide content of 10 to 60 wt. %, wherein the aqueous dispersion is stable in the pH range of 2 to 6,
the aqueous dispersion additionally contains at least one compound, which is at least partially soluble in aqueous solution in the pH range of 2 to 6 in the form of polyvalent cations, these being stable in a silicate-like environment as an anionic component of the particle surface of the silicon dioxide powder,
the quantity of cation-providing compound in relation to the surface of the silicon dioxide is 0.001 to 0.1 mg cation-providing compound/m² silicon dioxide surface, the cation-providing compound being calculated as the oxide, and
the zeta potential of the aqueous dispersion has values of less than or equal to zero.

Claim 2. (Original) The aqueous dispersion as claimed in claim 1, wherein the cation-providing compound is an amphoteric compound having Be, Zn, Al, Pb, Fe or Ti as its cation, and mixtures of these compounds.

Claim 3. (Original) The aqueous dispersion as claimed in claim 2, wherein the amphoteric compound is an aluminum compound.

Claim 4. (Original) The aqueous dispersion as claimed in claim 1, wherein the silicon dioxide powder is a pyrogenically-produced silicon dioxide powder.

Claim 5. (Original) The aqueous dispersion as claimed in claim 4, wherein the BET specific surface area ranges from 5 to 600 m²/g.

Claim 6. (Original) The aqueous dispersion as claimed in claim 1, wherein the pH value ranges from 3 to 5.

Claim 7. (Original) The aqueous dispersion as claimed in claim 1, wherein the pH of the dispersion is adjusted by the addition of acid or base thereto.

Claim 8. (Original) The aqueous dispersion as claimed in claim 7, wherein the acid is hydrochloric acid, sulfuric acid, nitric acid or a C₁-C₄-carboxylic acid and said base is an alkali hydroxide, ammonia, an ammonium salt or an amine.

Claim 9. (Original) The aqueous dispersion as claimed in claim 1, wherein the viscosity at a shear energy of 1.28 s⁻¹ is at least 10 % lower than the viscosity of a dispersion of the same composition that contains no cation-providing compound.

Claim 10. (Original) The aqueous dispersion as claimed in claim 1, wherein the number of agglomerates with a size greater than 1 μm is at least 50 % lower than that of a dispersion of the same composition that contains no cation-providing compound.

Claim 11. (Original) The aqueous dispersion as claimed in claim 1, wherein the average secondary particle size of the silicon dioxide powder is less than 200 nm.

Claim 12. (Original) The aqueous dispersion as claimed in claim 1, wherein the dispersion contains a preservative.

Claim 13. (Withdrawn-Currently Amended) A process for the production of the aqueous dispersion as claimed in claim 1, comprising:

~~wherein adding~~ silicon dioxide powder and at least one cation-providing compound in a quantity of 0.001 to 0.1 mg cation-providing compound/m² of silicon dioxide surface ~~are added to the~~ an aqueous dispersion medium ~~while the dispersion is agitated~~ with agitation, thereby forming said aqueous dispersion.

Claim 14. (Withdrawn) The process for the production of the aqueous dispersion as claimed in claim 13, wherein the cation-providing compound is added, in solid form or as an aqueous solution, to an aqueous dispersion of silicon dioxide.

Claim 15. (Withdrawn) The process for the production of the aqueous dispersion as claimed in claim 13, wherein the silicon dioxide powder is added at once, or in portions, to an aqueous solution of the cation-providing compound.

Claim 16. (Withdrawn) The process for the production of the aqueous dispersion as claimed in claim 13, wherein the silicon dioxide powder and cation-providing compound are added to the liquid dispersion phase at the same time, in portions or continuously.

Claim 17. (Withdrawn) A powder consisting of at least one cation-providing compound and silicon dioxide powder, the content of the cation-providing compound,

calculated as the oxide, being 0.001 to 0.1 mg cation-providing compound/m² silicon dioxide surface.

Claim 18. (Withdrawn) The powder as claimed in claim 17, wherein the cation-providing compound is an aluminum compound and the silicon dioxide is a pyrogenically-produced silicon dioxide powder.

Claim 19. (Withdrawn) A method of chemically-mechanically polishing metal surfaces, comprising:

applying the aqueous dispersion of claim 1 to a metal surface while polishing said surface.

Claim 20. (Withdrawn) A method of producing ink-jet papers, comprising:
incorporating the aqueous dispersion of claim 1 into an ink-jet formulation of the papers.

Claim 21. (Withdrawn) A method of producing gel batteries, comprising:
incorporating the aqueous dispersion of claim 1 into the material of said gel batteries.

Claim 22. (Withdrawn) A method for clarifying/fining wine and fruit, comprising:
incorporating the aqueous dispersion of claim 1 into wine and fruit.

Claim 23. (Withdrawn) A method for improving water-based dispersion paints,
comprising:

incorporating the aqueous dispersion of claim 1 into water-based dispersion paints, thereby improving the suspension behavior of pigments and fillers in the paints and thereby increasing the scratch resistance of applied paint.

Claim 24. (Withdrawn-Currently Amended) A method of improving the color stability of ink-jet inks, comprising:

incorporating the aqueous dispersion of claim 1 into the carbon black dispersion of an ~~inkjet~~ ink-jet inks, thereby improving the stability of the black coloration of ink-jet ink formulations.

Claim 25. (Withdrawn) A method of stabilizing biocides, comprising:

incorporating the aqueous dispersion of claim 1 into the emulsions and dispersions of biocidal formulations.

Claim 26. (Withdrawn) A method of treating paper and cardboard surfaces, comprising:

treating the surfaces of paper and cardboard with the aqueous dispersion of claim 1 thereby eliminating stickiness of said surfaces to achieve an antislip effect on the paper or cardboard.

Claim 27. (Withdrawn) A method of reinforcing natural latex and synthetic latex, comprising:

incorporating the aqueous dispersion of claim 1 as a reinforcing agent into the natural or synthetic latex.

Claim 28. (Withdrawn) A method of improving slip resistance, comprising:

coating a surface with the aqueous dispersion of claim 1.

Claim 29. (Withdrawn-Currently Amended) A method of producing optical fibers and quartz glass, comprising:

forming the optical fibers and quartz glass in the presence of the aqueous dispersion of claim 1.